David J. Farrell's Anatomy and

FIRST AID IN PICTURES

PRICE 1/6

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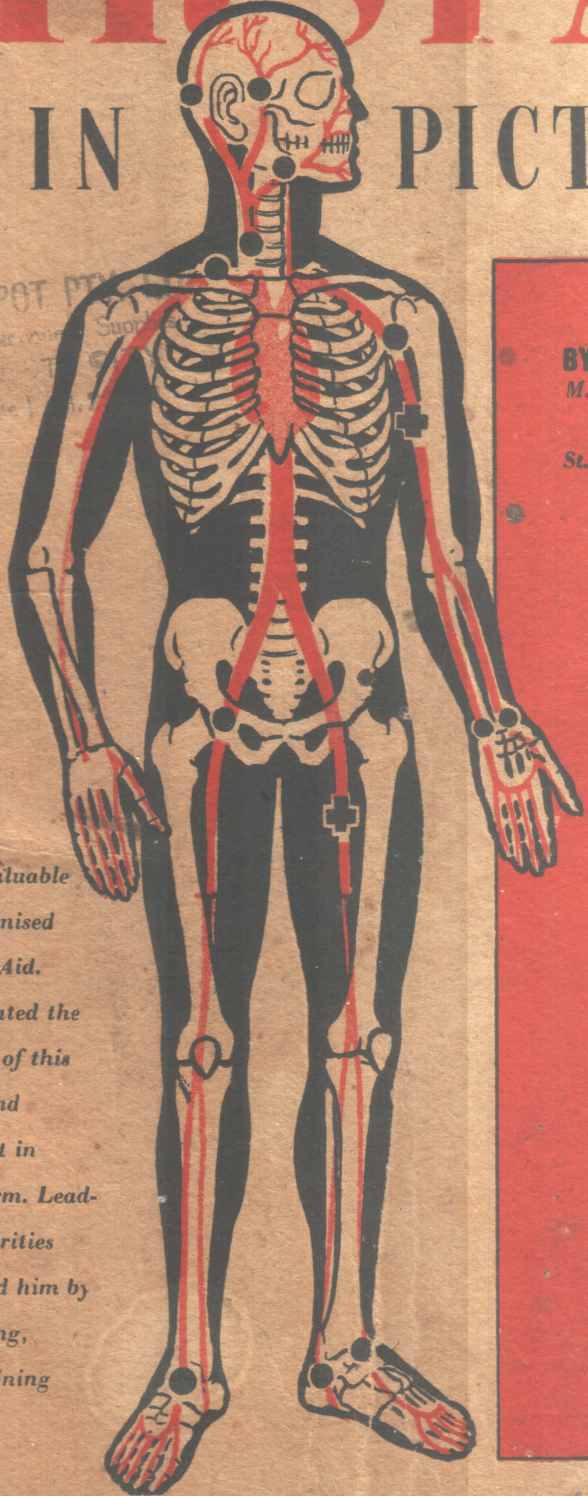

★

This book is an invaluable adjunct to the recognised handbooks on First Aid. Mr. Farrell has collated the essential knowledge of this important subject and clearly interpreted it in excellent picture form. Leading First-Aid Authorities have greatly assisted him by encouraging, advising, and carefully examining his work.

FOREWORD

BY DR. H. R. G. POATE, Kt. St. John
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Commissioner
St. John Ambulance Brigade, Aust.

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SNAKE AND SPIDER BITES.

GENERAL FIRST AID TREATMENT.

FIRST AID TREATMENT, *cont.*

Including 13 Plates in colours, each with simple explanatory text suitably written for the student of Anatomy and First Aid.

FOREWORD.

The preparation of this work, illustrating the essential points necessary for a basic knowledge of First Aid, has taken much time and diligent work on the part of the Author.
It is appearing at a most appropriate time, since so many of our citizens are anxious to acquire some useful and practical knowledge of elementary Anatomy, as a foundation for First Aid.

This publication will not compete with any of the standard First Aid books, but will be complementary to them all. The general public will find the charts very clear and easily understood. Where possible they are anatomically correct, but in certain cases they must of necessity be diagramatic, as in the chart showing the "Circulation of the Blood."

Mr. Farrell is to be complimented on his work, as well as on his patriotic gesture in making this work available to the public at a nominal price.

H. R. G. POATE, Kt. St. J.,
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225 MACQUARIE ST.,
SYDNEY.
16 March, 1942

PREFACE.

It is my belief that every adult and senior school child should possess a practical knowledge of First Aid. With this in mind, I have produced this book, in a sincere attempt to make the teaching and learning of First Aid easier for all.

I have always felt that First Aid would be more easily learned if the Student had accurate diagrams to learn from, therefore I have carefully compiled and planned this work, to be an adjunct to the recognised First Aid Manuals.

I am deeply indebted to Dr. H. R. G. Poate, Kt. St. John, Commissioner St. John Ambulance Brigade, N.S.W.; Major-General F. A. Maguire, Director General Australian Army Medical Services; Dr. A. E. Machin, Principal Medical Officer, Education Department, N.S.W.; Dr. H. Hunter, Secretary Medical Services Committee, N.E.S., N.S.W.; Dr. H. G. McQuiggan, Physiology Department, Unversity of Sydney; Mr. J. R. Kinghorn and Mr. A. Musgrave, Australian Museum; Mr. Burgess; Mr. J. Collins; Mr. F. R. Knight and Mr. M. J. Hogan, of the Railway Ambulance Corps, N.S.W., for their kindly advice, and valuable time spent in examining my work.

To my friend, Stan. H. Clements, my special thanks for his patience and skill in helping me prepare the illustrations.

Finally, for the encouragement given by the abovementioned, without which this work could not have appeared in its present form.

14 March, 1942

DAVID J. FARRELL.

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The Principles of First Aid.

WHAT IS FIRST AID ?

First Aid is the rendering of **immediate temporary assistance** to an injured person until such time as the arrival of a Doctor. A knowledge of First Aid will be found most valuable in cases of accident, or any sudden illness, and if efficient treatment is applied may be the means of saving lives in cases such as—

Bleeding from a Wounded Artery, Drowning, Snake-bite, a severe Fracture, or some cases of poisoning.

DIAGNOSIS—

A decision as to the nature of the injury or illness. In forming a diagnosis, it is necessary to take into consideration, where possible, the signs, symptoms and history of each case.

FIRST AID DIAGNOSIS DEPENDS ON:—

1. **Signs:** that which you can observe yourself. For example: Blood, pale or flushed skin, swellings, wounds, etc.
2. **Symptoms:** the sensations or things felt by the patient. For example: Pain, loss of feeling in certain parts, burning, faintness, etc.
3. **Case History:** information obtained from either patient or bystander, or other evidence which led up to the accident or illness. For example: Presence of a poison bottle, fallen electric wire, etc.

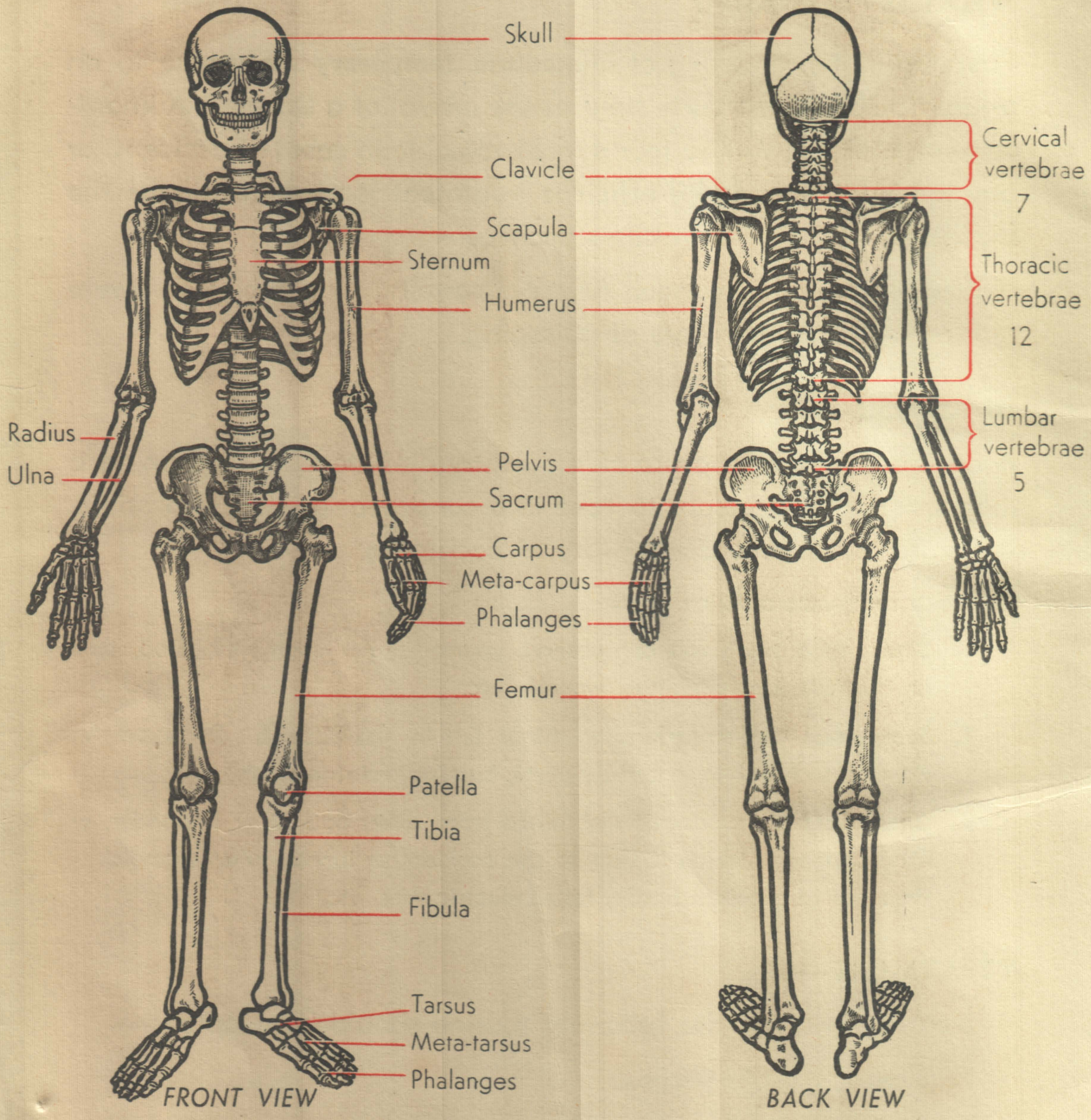
TREATMENT—

In treating injuries, the following routine should be adopted:—

1. Bleeding must be stopped..
2. If breathing has ceased, or is failing, apply Artificial Respiration.
3. Cover exposed wounds with any clean material, such as a handkerchief or paper, etc., and as soon as possible dress suitably.
4. Shock or unconsciousness must receive attention.
5. Fractured bones must be correctly splinted.

★ ***For First Aid in General Practice, pages Fifteen and Sixteen.***

The Human Skeleton



The Human Skeleton is made up of 206 distinct bones which serve the following purposes—

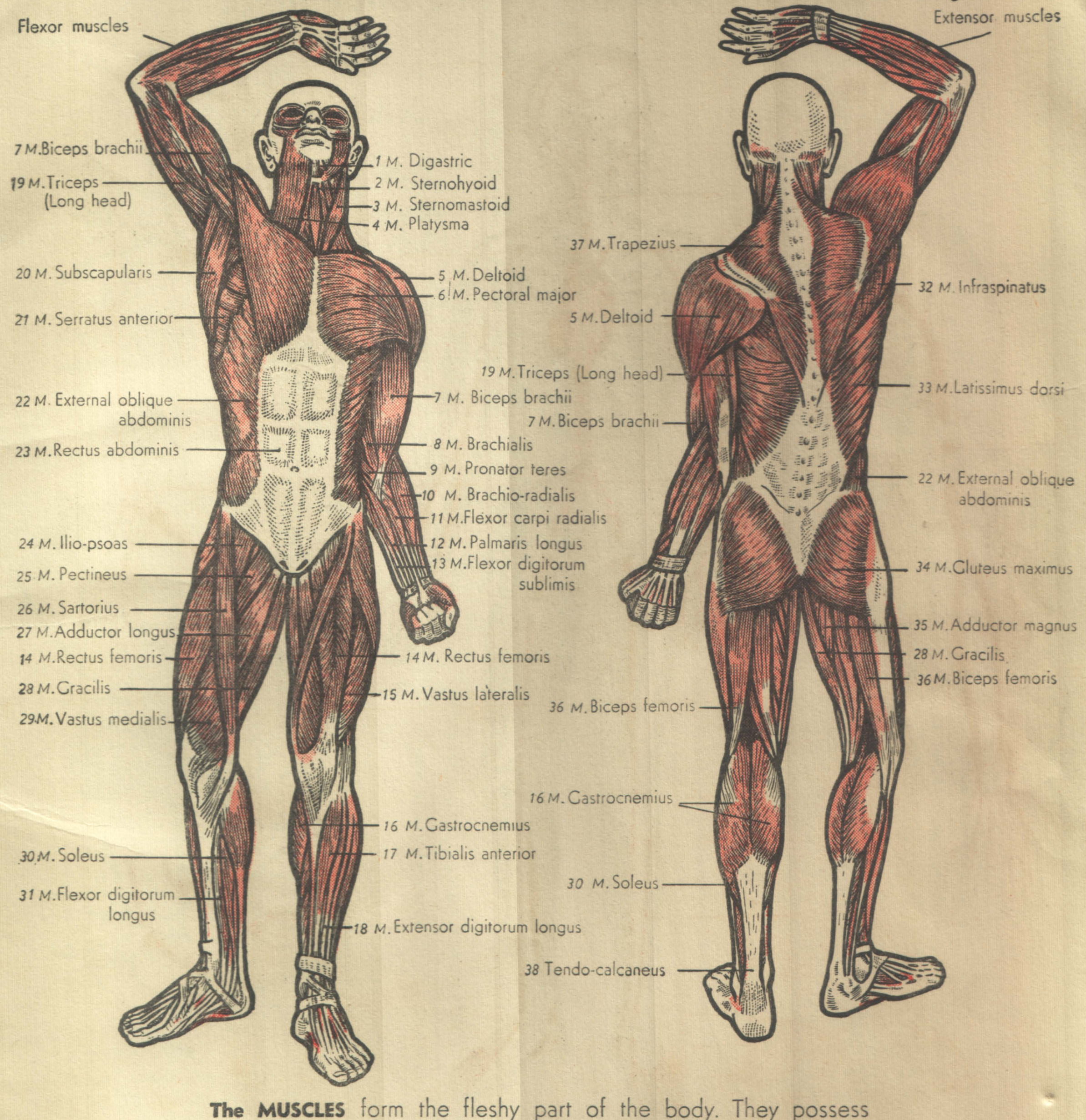
(1) A strong framework for the body.
(2) Carries and supports the soft tissues.
(3) Protects the vital organs.
(4) Is a foundation for the muscles.
(5) Forms joints which help locomotion.

The skeleton is divided into

(1) The Head:— The skull and face.
(2) The Trunk:— Thorax, abdomen and pelvis.
(3) Extremities:— The upper and lower limbs.

All bones are subject to injury, and when fractured, they must be splinted correctly in order to retain their normal shape.

The Muscles of the Human Body



The MUSCLES form the fleshy part of the body. They possess the special property of contracting or shortening themselves, and so produce bodily movements by moving the bones at the joints.

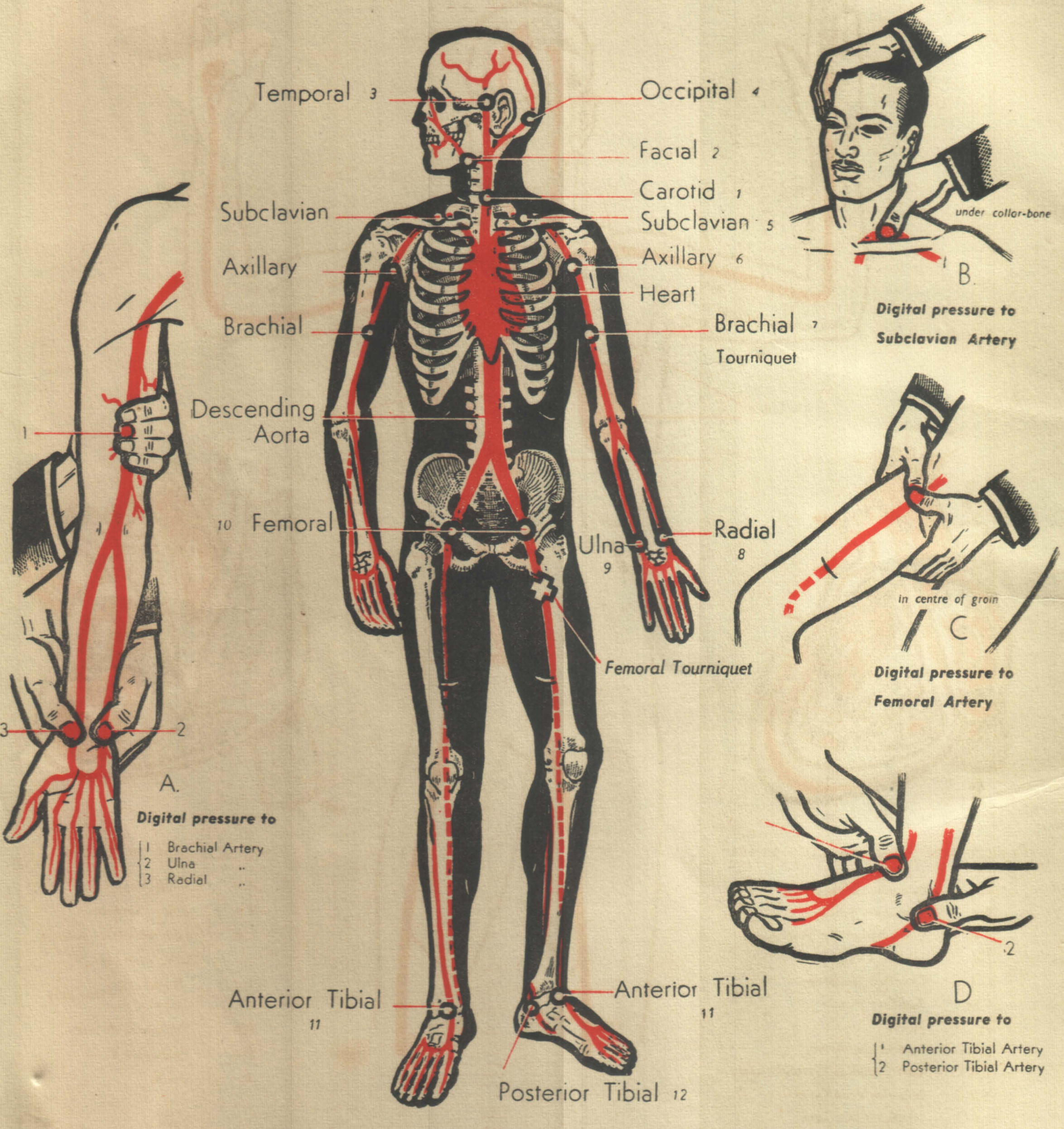
There are two types of muscles.

1. VOLUNTARY, which are under the control of the will. These muscles are found in the limbs, head, and walls of the trunk. The fibres are attached directly to a fixed bone, and are united by tendons to the bone to be moved. The muscles contract or shorten, and so produce bodily movements. The bone is returned to its original position by another muscle.

2. INVOLUNTARY, which are not attached to bones, and hence need no tendons. They are found in most of the internal organs and blood vessels, in the walls of the stomach and bowels, and the air passages. They are not under the control of the will, and hence continue their work during the hours of sleep.

The Main Arteries

with the Pressure Points indicated



Digital pressure to

1 Brachial Artery
2 Ulna ,,
3 Radial ,,

Digital pressure to Subclavian Artery

Digital pressure to Femoral Artery

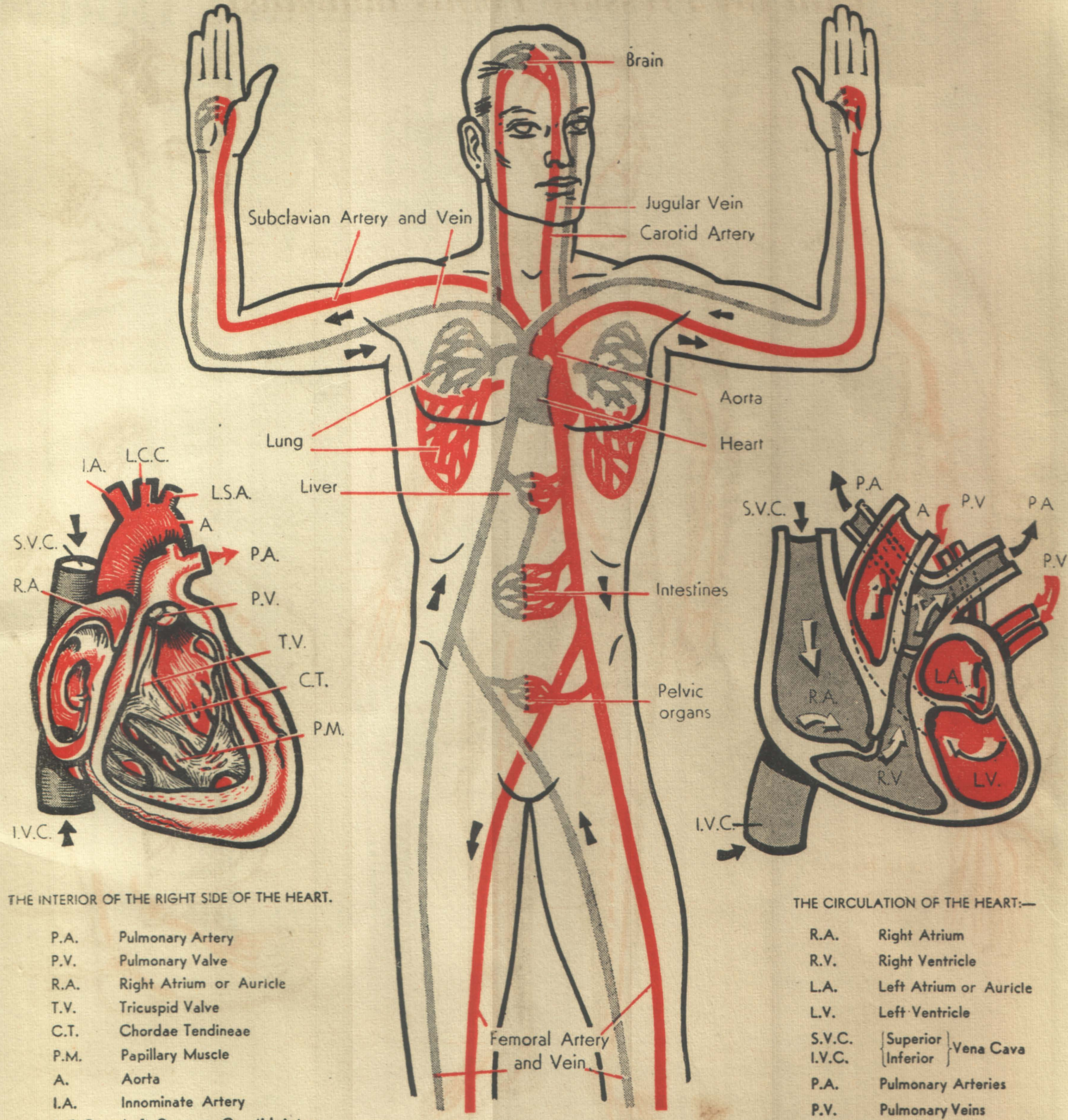
Digital pressure to

1 Anterior Tibial Artery
2 Posterior Tibial Artery

BLOOD: the nourishing fluid of the body is carried by the ARTERIES, which are hollow elastic tubes, distributed to all parts. The MAIN ARTERIES are large, and in most situations are protected by other structures. When an ARTERY has been severed BRIGHT RED BLOOD will spurt out in jets from the injured vessel. Where direct pressure cannot be applied 12 PRESSURE POINTS and 2 TOURNIQUET SITES have been carefully selected where pressure may be used to control HÆMORRHAGE. It is essential to prevent loss of blood. Arterial bleeding must always receive prompt attention, *otherwise DEATH from loss of blood may occur.*

The Circulation of the Blood

(Diagramatic)



THE INTERIOR OF THE RIGHT SIDE OF THE HEART.

P.A.	Pulmonary Artery
P.V.	Pulmonary Valve
R.A.	Right Atrium or Auricle
T.V.	Tricuspid Valve
C.T.	Chordae Tendineae
P.M.	Papillary Muscle
A.	Aorta
I.A.	Innominate Artery
L.C.C.	Left Common Carotid Artery
S.V.C.	Superior Vena Cava
I.V.C.	Inferior Vena Cava
L.S.A.	Left Subclavian Artery

THE CIRCULATION OF THE HEART:—

R.A.	Right Atrium
R.V.	Right Ventricle
L.A.	Left Atrium or Auricle
L.V.	Left Ventricle
S.V.C. I.V.C.	Superior Inferior } Vena Cava
P.A.	Pulmonary Arteries
P.V.	Pulmonary Veins
A.	Aorta

THE HEART: a hollow muscular organ, is divided into four chambers, two ATRIA and two VENTRICLES The HEART is composed of involuntary muscles, which by alternately contracting and relaxing, continuously pump blood into the arteries, which are distributed to all parts of the body.

The Circulatory System comprises:

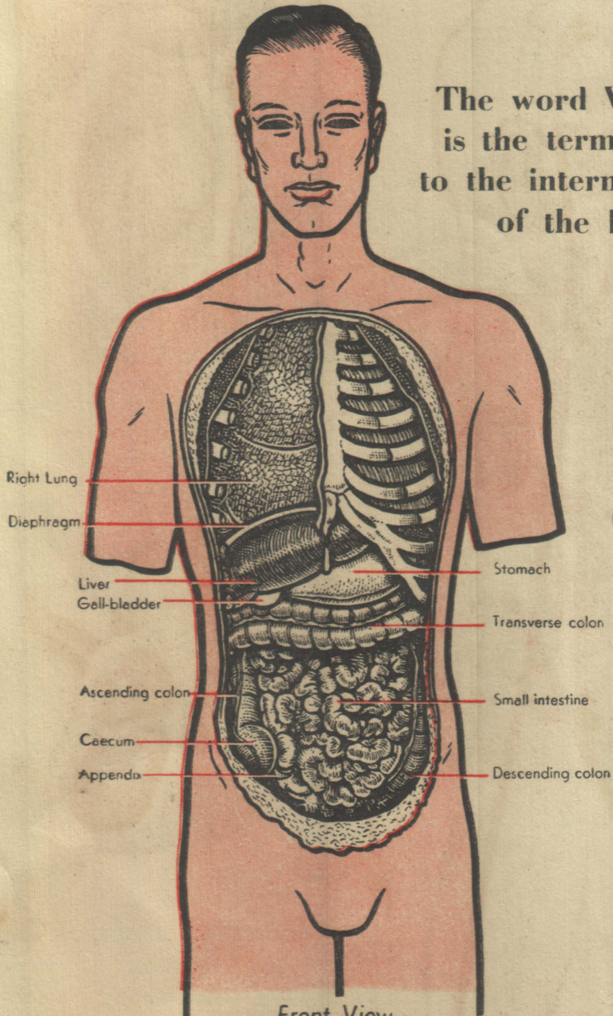
1. *The Systemic Circulation.*
2. *The Pulmonary Circulation.*

The Pulmonary Circulation enables the venous blood to give off its CARBON DIOXIDE and to be charged with oxygen. This interchange of gases occurs between the blood (in the LUNG CAPILLARIES) and the AIR in the LUNGS.

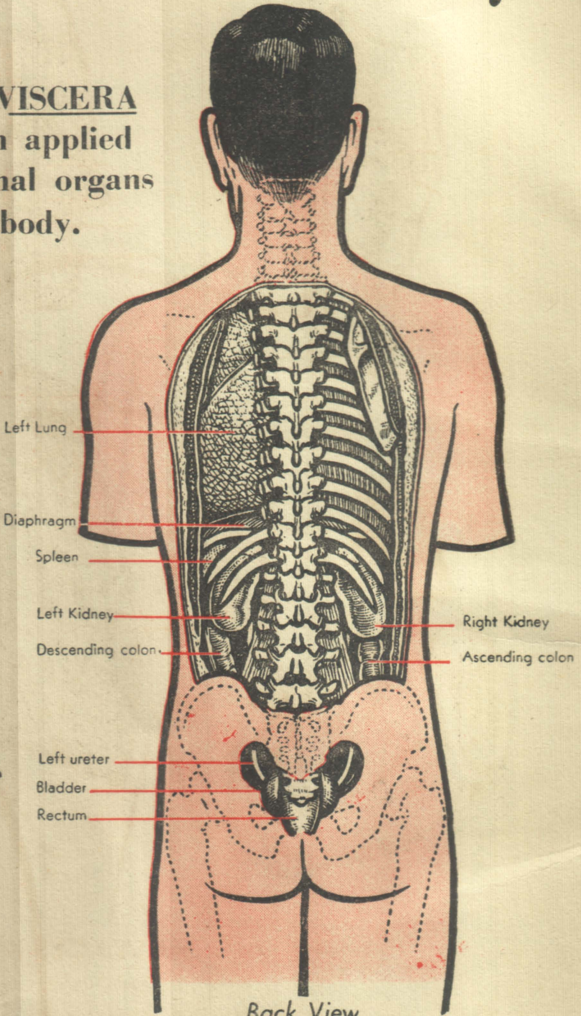
The Systemic Circulation conveys oxygen and nutriment to the various organs and tissues, and distributes them by means of the CAPILLARIES, which also collect waste products, which are carried in the blood to the LUNGS, and other organs of excretion.

The Viscera of the Human Body

The word VISCERA is the term applied to the internal organs of the body.



Front View



Back View

The **Thoracic Cavity** occupies the upper part of the trunk and contains:–

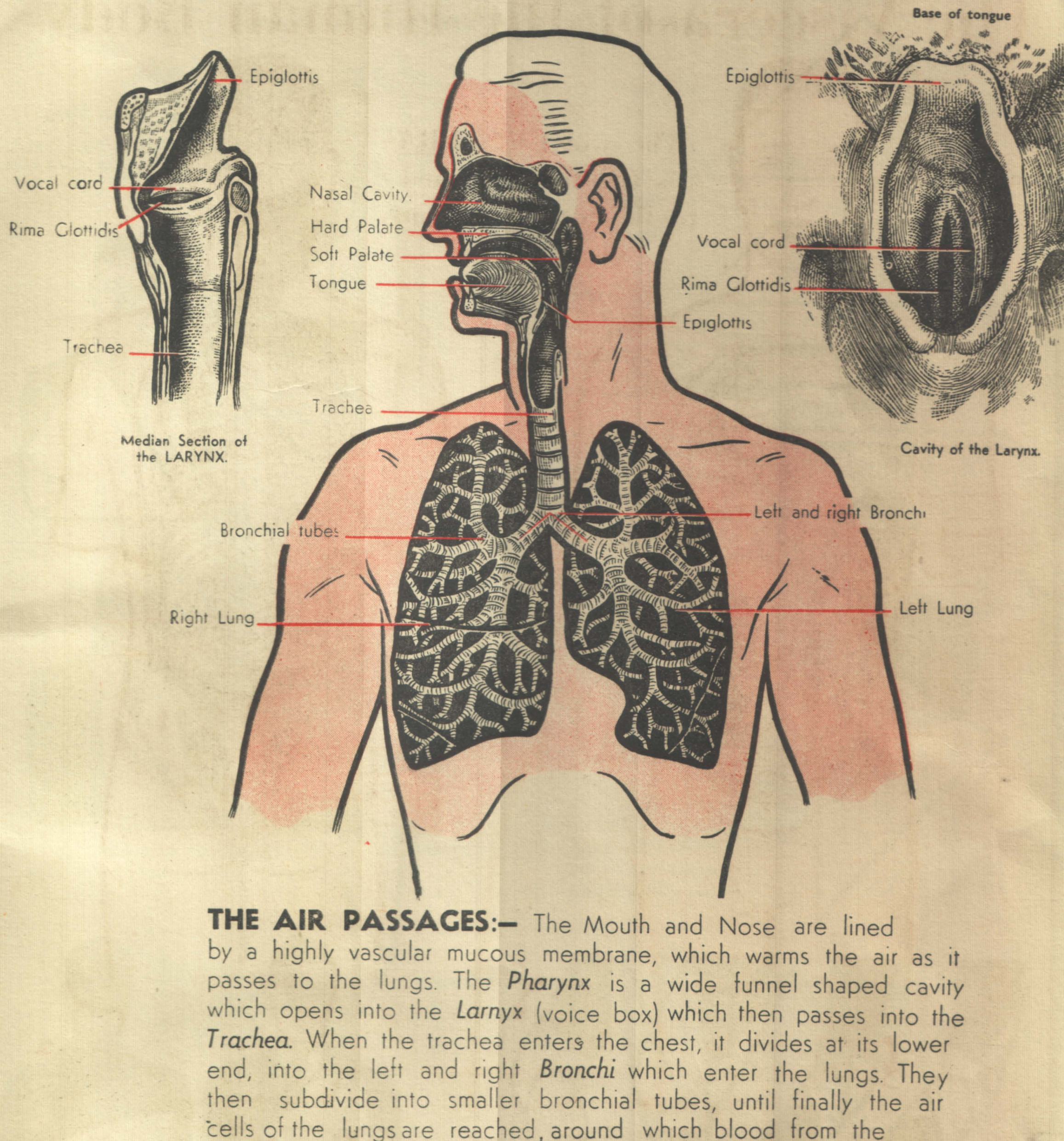
(1) The **Lungs** with their vessels and tubes
(2) The **Heart** with its vessels
(3) The **Oesophagus** *(Gullet)*
(4) Portion of the **Trachea** *(Windpipe)*

The **Abdominal Cavity**, which occupies the lower portion of the trunk, also includes the **Pelvis.** Its contents are:- Below the diaphragm.

(1) The **Liver** with the **Gall-bladder** attached. (2) The **Stomach.** (3) The **Spleen.**

Lying deep to these organs are to be found the **Pancreas** and the **Kidneys** with the **Ureters** attached. The **Intestines** occupy the remainder of the cavity The **Pelvis** contains the **Bladder** and **Rectum,** and in the female the **Organs of Reproduction.**

The Respiratory System



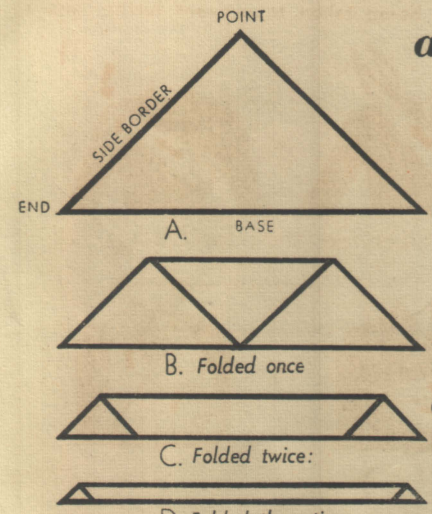
Median Section of the LARYNX.

Cavity of the Larynx.

THE AIR PASSAGES:– The Mouth and Nose are lined by a highly vascular mucous membrane, which warms the air as it passes to the lungs. The ***Pharynx*** is a wide funnel shaped cavity which opens into the ***Larnyx*** (voice box) which then passes into the ***Trachea.*** When the trachea enters the chest, it divides at its lower end, into the left and right ***Bronchi*** which enter the lungs. They then subdivide into smaller bronchial tubes, until finally the air cells of the lungs are reached, around which blood from the ***Pulmonary Arteries*** comes into contact with the oxygen from the air cells through whose delicate walls gases can readily pass The blood passing to the lungs in the pulmonary arteries carries carbon dioxide gas. The air cells of the lungs contain air, and an interchange of gases takes place. ***Oxygen*** from the air passes into the ***Pulmonary Capillaries,*** and is taken up by the ***Red Corpuscles*** of the blood. ***Carbon Dioxide*** passes from the pulmonary capillaries into the air cells, and is given out in the expired air.

The Triangular Bandage

and its application



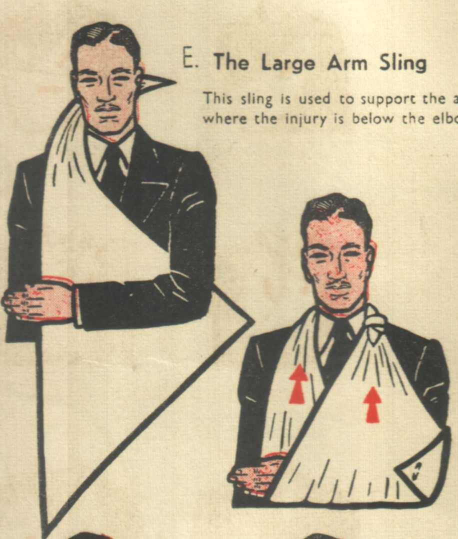
B. *Folded once*

C. *Folded twice:*

D. *Folded three times:*

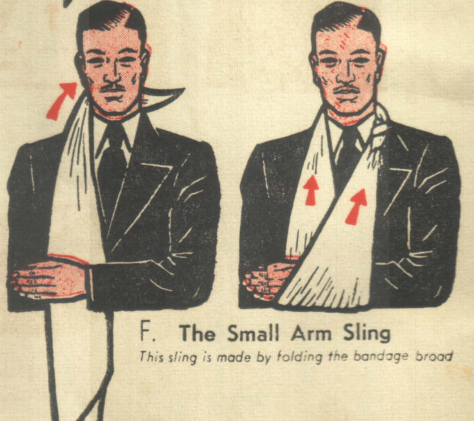
METHOD OF
FOLDING
TRIANGULAR BANDAGE.

A. *The Triangular Bandage*
B *Folded once*
C. *The broad bandage*
D. *The narrow bandage*



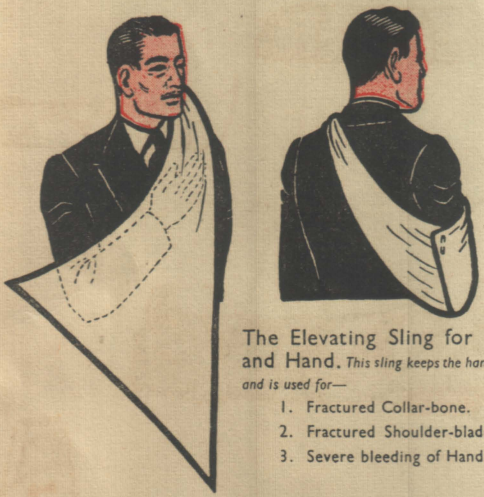
E. **The Large Arm Sling**

This sling is used to support the arm where the injury is below the elbow.



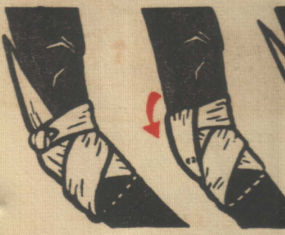
F. **The Small Arm Sling**

This sling is made by folding the bandage broad

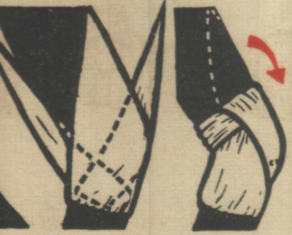


The Elevating Sling for Forearm and Hand. *This sling keeps the hand well raised, and is used for—*

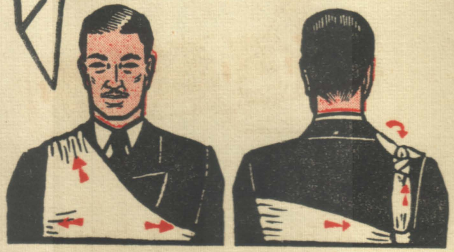
1. Fractured Collar-bone.
2. Fractured Shoulder-blade.
3. Severe bleeding of Hand.



G. **Bandage for the Elbow**



H. **Bandage for the Knee**



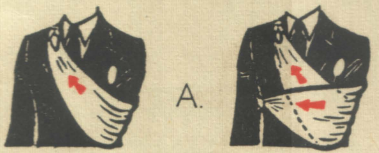
I. **Bandage for the Chest**

The Triangular Bandage plays an important part in First Aid Treatment:–

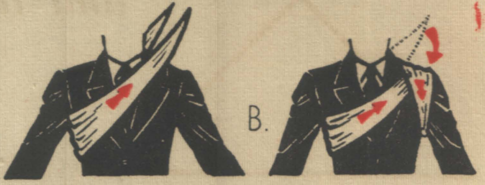
Its main uses are:–
(1) To hold splints in position.
(2) To afford support to any injured part.
(3) To reduce swelling.

The Treatment of Fractures

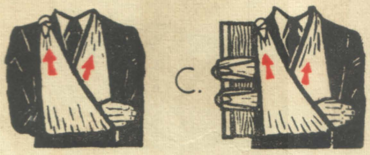
★ **All fractures should be suitably splinted on the spot, care being taken to prevent further injury.**



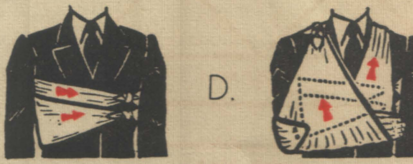
Fractured Collar Bone



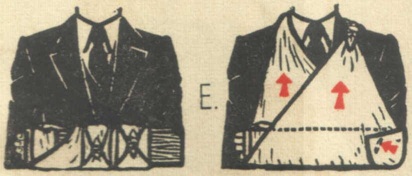
Fractured Shoulder Blade



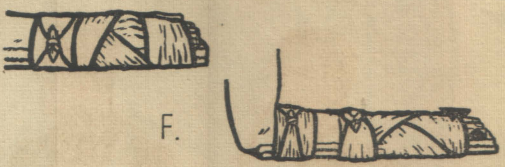
Fractured Upper Arm



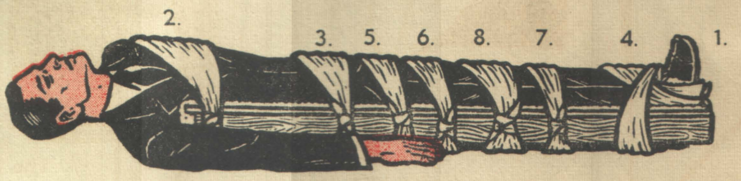
Fractured Ribs



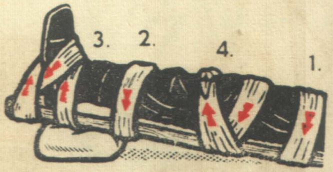
Fractured Forearm



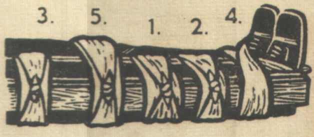
Fractured Hand



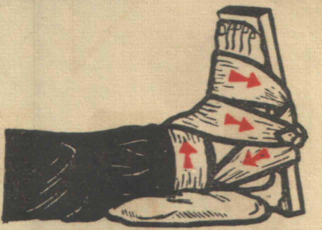
G. Fractured Femur



H Fractured Knee-cap



I. Fractured Leg



J. Fractured Foot

A Fracture is a broken bone.

Caused by:–(1) *Direct violence,* when the bone has been broken at the point of impact. (2) *Indirect violence:* When the bone has been broken at some distance from the point of impact, e.g., Fracture of the collarbone by falling upon the outstretched hand (3) *Muscular action:*–Snapping of a bone by a sudden violent contraction, e.g., the Knee Cap, which is common in athletics.

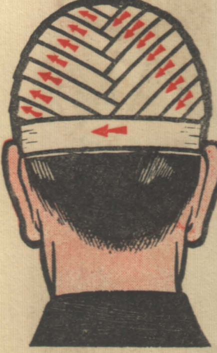
Classified Fractures are:–

(1) **Simple:** Where the bone has a clear break.
(2) **Compound:** Where the broken bone protrudes through the skin edge. or a wound leads down to the Fracture

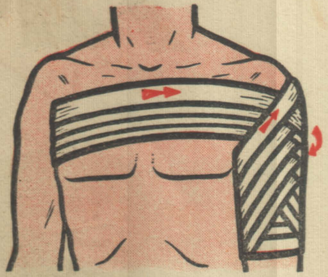
The various Fractures may be:–

(1) **Comminuted:** Where the bone has been splintered into fragments.
(2) **Complicated:** Where the fracture is accompanied by an injury to the surrounding organs.
(3) **Impacted:** Where the broken ends are wedged into one another.
(4) **Incomplete or Green Stick:** Where the bone is partly broken, mostly met in children, whose bones are softer than those of adults.

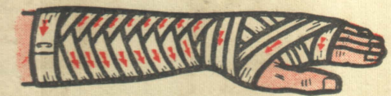
The Roller Bandage *and its application*



The capeline bandage for the Head



Spica bandage for the Shoulder



Bandage for the Forearm and Hand

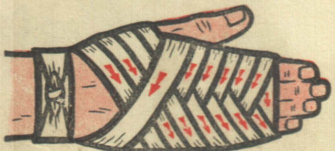
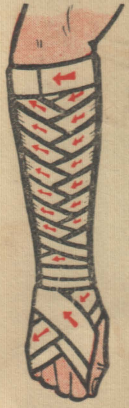
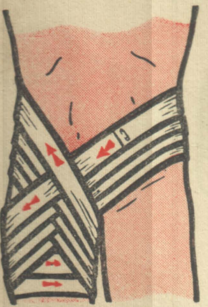


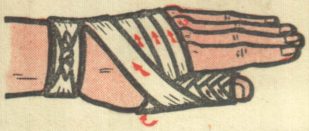
Figure of 8 bandage for the Hand.



Reverse spiral bandage for the Forearm



Spica bandage for the Groin or Hip



Spica bandage for the Thumb

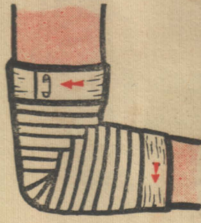


Figure of 8 bandage for the Elbow

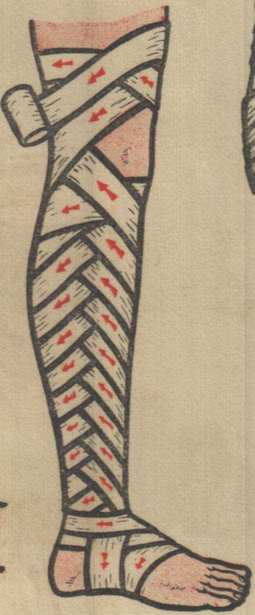


Figure of 8 bandage for the Leg

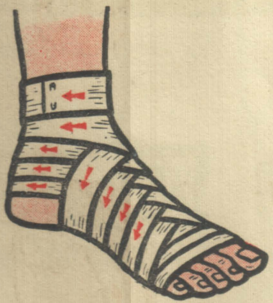
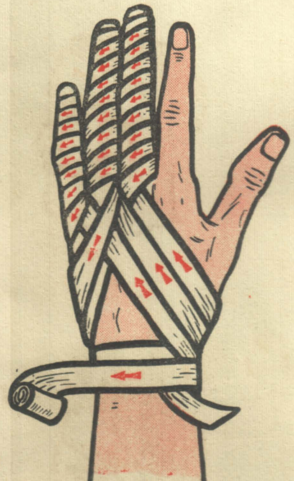


Figure of 8 bandage for the Foot or Ankle



Simple spiral bandage for the Fingers

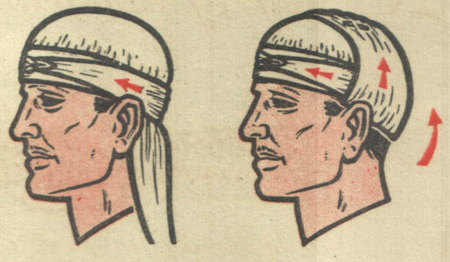
The uses of the Roller Bandage:–

(1) To keep splints and dressings in position

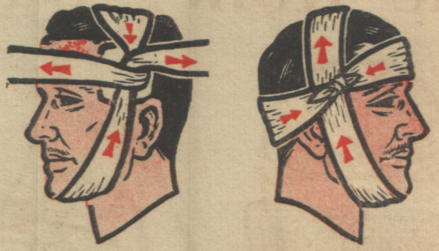
(2) To give support

(3) To reduce swelling

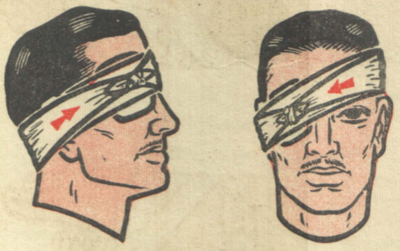
The Application of Bandages for Injuries to the Head



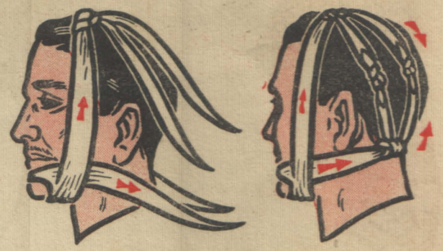
A. For the scalp



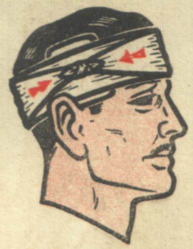
B. The Bridle bandage



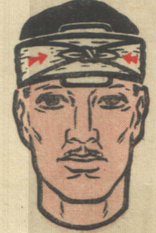
C. For the eyes



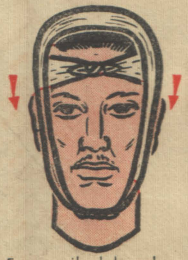
D. Four-tailed bandage for the jaw



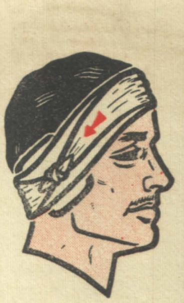
E. For the side of the head



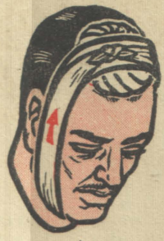
F. For the Forehead



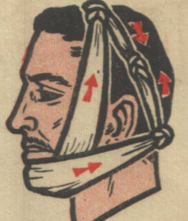
G. Four-tailed bandage for any part of the Head



H. For the Ear



I. The Ring pad used to relieve pressure where a fracture or foreign body is suspected



J. For fracture of the lower jaw — *two bandages are needed.*

These diagrams show clearly how to apply bandages.

★ *All dressings should be completely covered by the bandages to prevent them moving.*

Artificial Respiration *The Schafer Method*

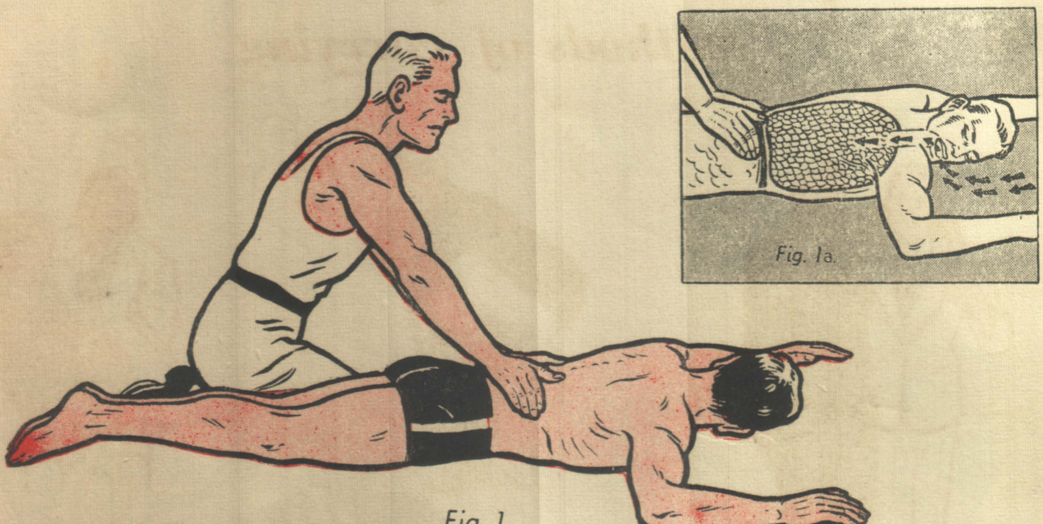


Fig. 1.

Artificial Respiration—or the Restoring of **NATURAL BREATHING**, is used in cases where breathing is seen to be failing or has ceased; examples of which are—Drowning, Hanging, Choking, Inhalation of Gases, Electrocution, Pressure on Chest, Smothering, etc.

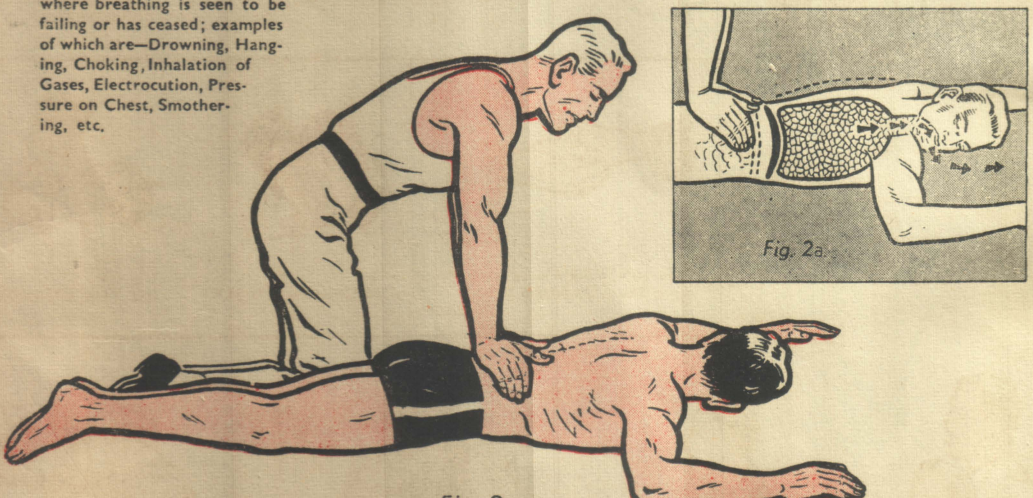


Fig. 2.

Commence Treatment Immediately. Lay the patient in the prone position (back upwards) with the arms extended above the head. Turn the patient's head to one side, so as to keep the nose and mouth away from the ground, making sure that the air passages are clear.

TO INDUCE EXPIRATION: Kneel at one side of the patient facing his head. Place your hands on the small of the patient's back, wrists nearly touching, the thumbs as near each other as possible without strain, the fingers passing over the loins on either side and pointing to the ground, but not spread out. (**Fig. 1**). Bending your body from the knees and somewhat straightening the hip joints, swing slowly forwards, keeping the arms quite straight so that the weight of your body is conveyed to your hands directly downwards. (**Fig. 2**). In this way the patient's abdomen is pressed against the ground; the abdominal organs are forced against the diaphragm, which rises, and air is driven out of the lungs (**Fig. 2A**) together with any water which may be present in the air passages or in the mouth, — producing **EXPIRATION.**

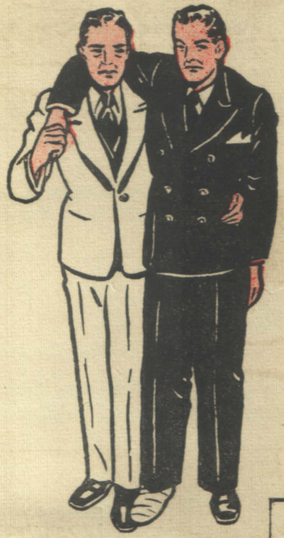
TO INDUCE INSPIRATION: Swing your body slowly backwards to its first position (**Fig. 1**), thus removing the weight from the hands (which are kept in position) and relaxing the pressure on the abdomen. The abdominal organs now fall back into their former position, the diaphragm descends, the thorax is enlarged, and air passes down into the lungs — producing **INSPIRATION.** (**Fig. 1A**).

Alternate these movements by a rhythmic swaying forwards and backwards of your body from the knee-joints, about twelve times a minute. The rhythm is: **pressure two seconds.; relaxation three seconds**

When natural breathing begins, regulate the movements of artificial respiration to correspond with it, and promote circulation by rubbing the limbs vigorously towards the heart and by applying warmth. *Artificial Respiration must be continued until a doctor pronounces life to be extinct.*

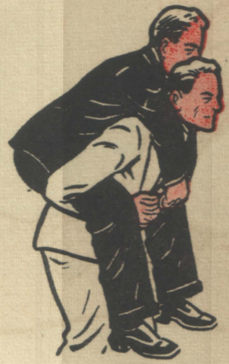
Transport of Injured Persons

methods of carrying



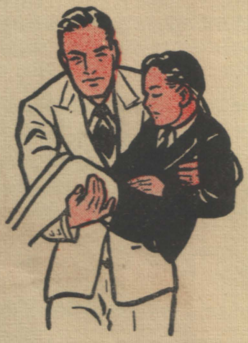
(A) HUMAN CRUTCH

Standing at the injured side, assist the patient by passing your arm round the waist grasping the clothing at the hip and passing the patient's free arm round your neck.



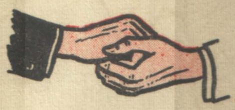
(B) PICK-A-BACK

If patient is able to hold on, this method of carrying may be used.

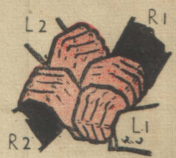


(C) CRADLE

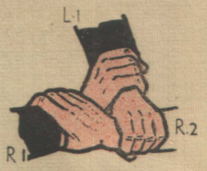
The arms must be passed well under before commencing to lift. This method suitable for children or light patients only.



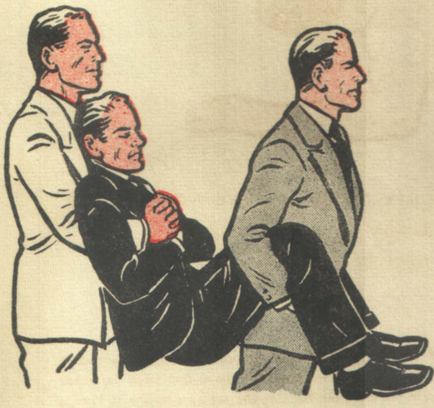
(1) THE HOOK-GRIP used for **THE TWO-HANDED SEAT**



(2) Grip for **THE FOUR-HANDED SEAT**

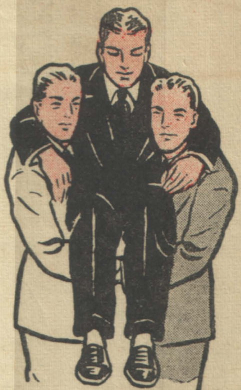


(3) Grip for **THE THREE-HANDED SEAT**



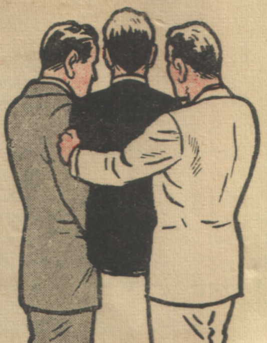
(D) THE FORE-AND-AFT METHOD

This method of carrying should only be used when space does not permit of a hand seat. The bearers walk in step.



(E) THE FOUR-HANDED SEAT

The patient places one arm round the neck of each bearer, in readiness to raise himself from the ground, and sit upon their hands. The bearers rise and step off together one with the left foot and the opposite bearer with the right foot.



(F) THE THREE-HANDED SEAT

When the patient has one or both arms free two bearers face each other, one bearer grasps his left forearm with his right hand, and the second bearer's right forearm with his left hand; the second bearer grasps front bearer's right forearm with his right hand. The bearers step off, one with the left foot, the other with the right foot.

The Treatment of Snake-Bite

WHAT TO DO IN CASES OF SNAKE-BITE

1. Apply ligature at once.

2. Wash the bitten area.

3. Make incisions over fang punctures.

4. Apply second ligature below the first.

SEND FOR A DOCTOR!

TREATMENT: Apply ligature immediately to prevent the spread of venom into the general blood stream. If bitten on the arm or the leg, a ligature, tight enough to stop the flow of arterial blood must be placed between the bite and the heart, on the upper arm near the armpit or around the thigh near the groin.

Do not place ligatures below the elbow or knee: Immediately the ligature has been applied (1), wash the bitten area with a pale pink solution of Condy's Crystals, or clean fluid (2). If these are not available, use saliva or urine, thus removing any venom from the surface of the skin.

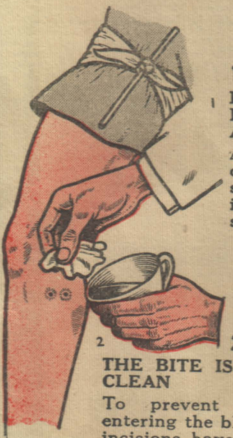
Make deep incisions over each of the fang punctures (3) and encourage bleeding by sucking the wound, if your lips are free from sores or cracks, and by massaging along the course of the arteries from the ligature, to the bite.

Place a second ligature around the limb just below the first one (4); this ligature stops the venous blood from returning to the heart.

Loosen and retighten the first ligature every ten minutes until medical help arrives.

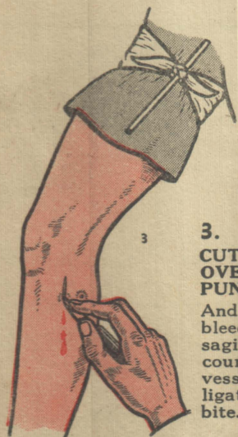
If bitten where a ligature cannot be applied, wash the bitten area, then pinch up the skin and make deep incisions.

The patient must be kept quiet and not allowed to walk about. Any movement tends to stimulate the circulation, which makes the venom travel faster. Keep the patient warm, and give warm drinks of hot black coffee or tea. The giving of alcohol should be left to the doctor.

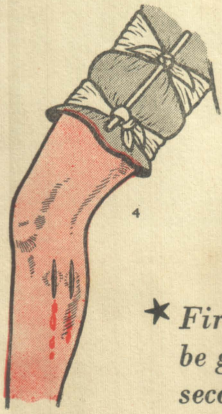


1.
FIRST LIGATURE APPLIED
Apply ligature at once to prevent spread of venom into the blood stream.

2.
THE BITE IS WASHED CLEAN
To prevent further venom entering the blood stream after incisions have been made.



3.
CUT DEEPLY OVER EACH PUNCTURE
And encourage bleeding by massaging along the course of the vessels from the ligature to the bite.



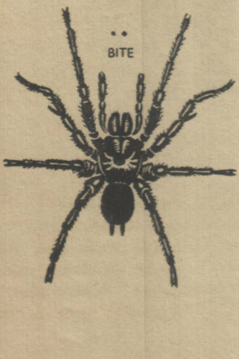
4.
SECOND LIGATURE IS PLACED
Just below the first one to prevent the return of venous blood to the heart.

★ ***First Aid must be given a few seconds after the patient is bitten***

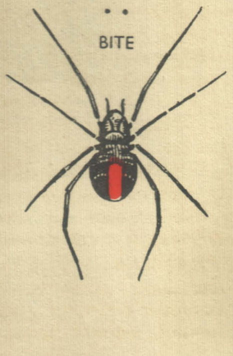
Poisonous Spiders and their Bites

TREATMENT: Treat as snake-bite immediately

THE SYDNEY FUNNEL WEB SPIDER.
is a large black or reddish brown spider, about an inch in length. It is very pugnacious and attacks on the slightest provocation. It builds in any natural crevice, and is mostly found around the northern shores of Port Jackson, and usually appears only at night. The bite causes a sharp stinging sensation. Within a few minutes, paleness, weakness, and vomiting appear, accompanied by excessive perspiration and shallow breathing. The pulse is feeble and may reach 150 per minute cyanosis, collapse and death may follow.



THE RED BACK SPIDER.
Has a black body about the size of a pea with a red stripe down the back. Most cases recorded were bitten while using out-door closets. The bite causes a sharp, stinging sensation, followed a few minutes later by severe cramping pain in the region of the bite, usually extending, causing a rigid abdomen. The bite of this Spider is not so deadly as that of the Funnel Web, only 6 p.c. of recorded cases have proved fatal.



First Aid in General Practice.

BURNS AND SCALDS.

Are caused by either dry or moist heat, or by friction (brush burns and burns by sliding down a rope). Examples of burns are by flame, hot air, hot solids, electricity, X-rays, or by corrosive poisons such as nitric acid and caustic soda. Examples of scalds are by steam, boiling water and hot oil.

TREATMENT.—If the burn is caused by a corrosive acid, wash with weak sodium bicarb. solution; if by a corrosive alkali, wash with boracic acid solution. If these cannot be obtained quickly, use plain water.

In all cases of burns and scalds—

(1) *Carefully but quickly remove the clothes from the parts, being careful to cut around any surfaces that are adherent to the skin, with scissors. Handle the burnt part very carefully, and avoid breaking blisters.*

(2) *If possible immerse the burnt part in lukewarm water to which has been added a small amount of sodium bicarb., boracic acid, or salt; prepare a dressing of lint soaked in one of the solutions above, or in one of the following:—*

> *1% solution of picric acid in warm water, or warm, strong tea, that has been made for at least ten minutes.*

Remove limb from water, and cover burnt area with dressing. Keep in place by lightly bandaging. As an alternative, the injured part may be covered with "Tannafax or Triple Dye" and bandaged. It is unwise to use tannic acid or Triple Dye on burns of the face or hands.

NOTE: Do not put oily substances, such as butter or carron oil, on the burn, as they will have to be removed under an anaesthetic before medical treatment can be applied.

Give drinks of water, milk or other fluid.

CHOKING.

Asphyxia brought about by an obstruction in the larynx or windpipe.

TREATMENT.—Lower the patient's head (children may be held upside down), and slap smartly between the shoulders. If the foreign body is not ejected, draw the tongue forward, insert the forefinger of the right hand and try to hook up the foreign body. If too far down to be removed in this way, the attempt will probably induce vomiting, and it may be ejected. If the breathing is difficult or has failed after the foreign body has been removed, apply artificial respiration.

CRAMP.

A painful spasmodic contraction of the muscles, occurring usually in the limbs, but may also affect certain internal organs. Attacks are sometimes brought about indirectly by derangement of the digestive system, exposure to cold, posture assumed during sleep, etc. In "swimmer's cramp," cold and exertion may affect the arteries and heart in addition to the muscles, and death may result.

DIAGNOSIS.—Sudden agonising pain in the calf of the leg, back of the thigh, etc., the muscles forming a band or knot. Relief may come suddenly, but sometimes the pain may last for a long period.

TREATMENT.—Rub the affected part briskly with the hand until relief is obtained, or apply warmth. In "Swimmer's Cramp" immediate treatment for shock is essential, warmth being particularly important.

CONCUSSION ("stunning").

An injury to the brain caused by a blow on the head, a fall, etc.

DIAGNOSIS.—Face pale; skin cold; pulse quick and weak; breathing shallow; pupils slightly dilated; stupor or coma. Signs of injury to the head, such as bruising or swelling, may be found.

In concussion the symptoms appear immediately after the accident. They may pass off and the patient recover, or the signs and symptoms of compression *may gradually appear.*

TREATMENT.—Lay the patient down, if possible in a darkened room, loosen clothing, and keep warm. Watch the patient carefully, and if signs of compression appear (face flushed instead of pale, pulse becoming slower and deeper, etc.) FIRST AID treatment for compression must be put into effect without delay.

COMPRESSION.

Caused by pressure on the brain by a clot of blood, a piece of bone in a depressed fracture of the skull, etc.

DIAGNOSIS.—Signs usually appear some time after the accident, and are frequently preceded by concussion; face flushed, pulse slow and deep; breathing heavy; pupil of one eye larger than that of the other; paralysis of a limb or on one side of the body. (If the injury is the result of a fracture of the base of the skull, *there is usually a discharge of blood and/or cerebro-spinal fluid from the nose, mouth and ears, in addition to the foregoing symptoms.)*

TREATMENT.—Lay the patient on his back, raise and support the head and shoulders, incline the head on one side. If there is bleeding from an ear, incline the head towards that side and apply a soft, absorbent dressing. Loosen clothing about the neck and chest; apply a cold compress to the head. Do not give stimulants; do not apply smelling salts. Keep in a darkened room, pending arrival of medical help.

FAINTING (Syncope).

Caused by the brain being deprived of blood owing to failure of the heart's action.

DIAGNOSIS.—History of hunger, fatigue, fright, inhalation of impure air, long standing in the sun, etc. Face pale, breathing shallow and irregular; beads of perspiration on the forehead; pulse rapid and weak; stupor.

TREATMENT.—Remove cause. Lay the patient down and raise the feet. Place the patient on a couch or table if he cannot be carried outside. It is not advisable to lay patient on the floor in a badly ventilated room. (Pushing the head between the knees is not advised, except as a preventive measure.) If the patient appears appears cold, provide warmth, i.e., use an overcoat, hot water bag, hot bricks wrapped in flannel, etc. Loosen clothing about the neck, chest and waist, fan; if inside, open doors and windows; if outside, keep the crowd back; apply smelling salts to the nose; rub the limbs towards the heart; dash cold water in the face. If able to swallow, give hot, strong tea, or coffee, or cold water. Moisten the tongue and lips with brandy.

INSENSIBILITY.

Loss of consciousness. There are two degrees of insensibility—partial (stupor) or complete (coma).

TREATMENT.—If breathing is absent, apply artificial respiration. If breathing is present, lay patient on his back, with the head turned to one side and undo all tight clothing; see patient gets fresh air and is kept warm. Never give fluids while the patient is insensible. Remove false teeth.

First Aid in General Practice—(*Continue d.*)

SHOCK.

A condition of depression occurring after every case of severe injury or sudden illness.

In shock there is a dilation of the blood vessel walls, shallow breathing and weak heart action, accompanied by a lowering of body temperature.

There are two types of shock—**Primary** and **Secondary.**

DIAGNOSIS.—Primary shock occurs immediately after an accident or sudden seizure. The patient is quiet, the face is pale and cold; skin clammy; pulse rapid and weak. During recovery, vomiting may occur.

SECONDARY SHOCK.

Occurs some time after the accident. Signs and symptoms are similar to those of primary shock.

TREATMENT.—Stop bleeding, if present, by pad and bandage, etc. Lay the patient down, raise the feet and turn the head to one side. If there is a fracture the limb should be splinted before moving patient, great care being taken to avoid any sudden or violent movement. Cover the patient with warm clothes, blankets, etc. Place hot water bags wrapped in flannel against the sides of the body and between the legs. If patient is conscious and able to swallow and there are no signs of bleeding, give warm drinks, such as tea or coffee. Do not give alcohol. Reassure the patient.

SPRAINS.

A sudden wrench or twist.

SIGNS AND SYMPTOMS.—Pain at joint. Inability to move without increasing pain. Swelling and discoloration.

TREATMENT.—Place limb in comfortable position. Expose joint and apply firm bandage. Wet bandage with cold water and keep it wet.

BRUISE.

A discoloured wound with unbroken skin.

TREATMENT.—Apply ice, cold water, equal parts spirit and water, tannin, or witch-hazel. These drive the blood away by constricting the walls of the blood vessels.

INSECT STINGS.

If a bee sting, remove the sting with a sterilised pin or needle. In all cases apply a moist blue-bag, ammonia, or other alkali. To relieve the pain give A.P.C.

POISONS may be divided into two classes.

Corrosive.—Those which burn the mouth; for example, strong acids such as nitric acid, and strong alkalies such as caustic soda.

TREATMENT.—Give unlimited quantities of cold water to dilute the poison and render it harmless; then give olive oil or butter; barley water or milk; finally, warm strong tea or coffee. Do not give an emetic, as injury to the tissue of the throat would be accentuated by a return of the poison. If breathing fails, apply artificial respiration.

Non-Corrosive.—Those which do not burn the throat but irritate the membranes of the stomach. They may cause acute abdominal pains, vomiting and diarrhoea.

TREATMENT.—Give an emetic (a tablespoonful of mustard or two tablespoonsful of salt in a tumblerful of water), or tickle the back of the throat to induce vomiting. When vomiting has ceased, give castor oil (except in cases of poisoning by phosphorus, cantharides or benzine), barley water or milk; hot, strong tea or coffee. If breathing fails, apply artificial respiration.

SUNSTROKE OR HEATSTROKE.

DIAGNOSIS.—History of exposure to the sun's rays or to excessive heat; face flushed; pulse quick; skin dry and hot; temperature of the body above normal.

TREATMENT.—Remove to shelter, strip to the waist, and, if possible, lay on a wet blanket. Apply ice or cold water to the head and neck. If conscious, give cold water to drink. When the symptoms subside, give Epsom Salts or Mist. Alba.

NOSE BLEEDING.

The patient should be seated with head erect to aid the venous return. He should not bend over a basin. The clothing should be loosened and the arms raised above the head. (The resultant chest expansion lessens pressure on the large venous trunks, and aids return of blood from the head). Ice or very cold water should be applied to the forehead, bridge of the nose, and back of the neck. The feet may be placed in a hot foot-bath.

NOTE.—If much blood has been lost, the patient must be watched for signs of fainting or collapse, the onset of which will probably be indicated by a feeble pulse.

NOSE.

If foreign body has been impacted in the nose, instruct patient to breathe through the mouth. Do not interfere with the foreign body, but take him to a doctor at once.

EYE.

Foreign body in eye.

TREATMENT.—Pull down the lower lid, or turn back the upper lid, and if foreign body is visible, remove it with the corner of a piece of linen, or the end of a cigarette paper rolled tightly and dipped in castor or olive oil. If the foreign body cannot be removed, put a drop of castor oil in the eye, and bandage lightly, until medical help arrives. If a corrosive acid is in the eye, bathe with sodium bicarb. solution or warm water, put in a drop of castor oil, and bandage lightly.

If a strong alkali, such as caustic soda, is in the eye, bathe with weak vinegar or warm water, put in a drop of castor oil and bandage lightly.

EAR.

Foreign body in ear.

TREATMENT.—If an insect is in the ear channel, fill the ear with olive oil, when the insect will float and can then be removed. Otherwise, make no attempt to treat a patient with a foreign body in the ear, but take him to a doctor as soon as possible. Further attempts to remove it may result in permanent damage to the ear drum.

★ **The Author is indebted to Mr. M. J. Hogan for permitting him to quote from his published work: "Encyclopaedia of First Aid." For more detailed description of First Aid in general practice refer to this excellent work.**

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